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# Letters

## COMMENT & RESPONSE

### Interpreting Database Studies

**To the Editor** We read with interest the thoughtful Invited Commentary by Browning<sup>1</sup> on our database study of diabetic vitrectomy.<sup>2</sup> Browning highlights the difficulties of database studies and how they might be addressed. For example, can we manually validate the electronic operation note against the patient's medical file, to confirm that any delamination was for tractional retinal detachment? While desirable, few database studies have permission to review individual patient's files in this way. Browning asks whether the gauge of surgery might confound our analysis? It might. Yet database studies are not designed to isolate the effect of one variable, such as port size, which occurs among many others. They are better suited to observing outcomes in toto.

Many UK vitreoretinal units use electronic medical records (EMRs) in the operating room but paper notes in the clinic. Thus, our electronic database captured surgical data much better than visual acuity (VA) data. Until EMRs are widely adopted in clinics, Browning is right to sound a note of caution about the completeness of VA data.

Browning notes that VA testing is not standardized. However, it might be unfair to benchmark VA data obtained from clinics against those obtained using protocol-mandated testing. He notes that a 0.3 logMAR unit change in VA is not a standard outcome measure, yet this equates to approximately 2 Snellen lines and accommodates the different eye charts used across the United Kingdom. We accept that our logMAR allocations are arbitrary for "counting fingers" vision or worse, but the data presented in our Figures 2 and 3 enable readers to allocate other values, if they wish.<sup>2</sup>

Browning notes that we provide 95% CIs for complication rates but not for VAs. But beware; authorities can use lower limits for benchmarking without considering case mix. For VA, this is problematic because copathology such as macular ischemia may drive outcomes more than surgical technique.

We previously used a single EMR,<sup>3-5</sup> but it is preferable to collect representative data from a range of sources, to avoid selective data capture. We congratulate the British and Eire Association of Vitreoretinal Surgeons for forging

consensus on a nationally agreed minimum data set for macular hole and retinal detachment. This incentivizes EMR manufacturers to collect core outcome measures and facilitates pooled analysis.

Database studies work best if there are nationally agreed data sets, case-mix adjustment prior to benchmarking, and critical appraisal that evolves alongside a relatively new method of study. We are not there yet, but the journey is worth the effort.

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**Conflict of Interest Disclosures:** All authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Dr Johnston is the medical director of Medisoft Limited, which developed the EMR from which data were extracted, for the first iteration of the National Ophthalmology Database. Dr Johnston also reports receiving grants and personal fees from Novartis and Alcon and personal fees from Bayer. No other disclosures were reported.

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